

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Y. ALMOG, et al.  
Serial Number: 09/529,289  
Filed: March 7, 2000  
For: COATING SYSTEM FOR SUBSTRATES  
Examiner: Ling X Xu  
Art Unit: 1774

#18

Honorable Commissioner of Patents and Trademarks  
Washington DC 20231

**APPEAL BRIEF**

Sir:

Further to a final official action dated March 21, 2002 and a notice of appeal dated June 20, 2002, the following is applicants brief on appeal.

(1) **Real Party of Interest:** The real party of interest in the present application is Hewlett Packard Corporation (H/P), a Delaware corporation. Indigo, NV, the assignee of the patent application is wholly owned by a subsidiary of HP.

(2) **Related Appeals and Interferences:** None

(3) **Status of claims:**

Claims 1-3, 7-12, 14-30, 32, 37-42 and 45 are present in the application. Claims 1-3, 11, 14-18, 20, 23-29, 32 and 42 stand rejected and form part of this appeal. Claims 7-10, 12, 19, 21,

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22, 30, 37-41 and 45 are withdrawn from consideration, but would be includable in a patent that issues from this application, if applicants prevail in this appeal.

**(4) Status of Amendments:**

An amendment after final, to overcome the rejection under 35 USC §112(2) of claim 11 is filed herewith. In the event that this amendment is not entered, the present brief argues the lack of necessity of the amendment. In addition, this amendment cancels the dependency of claim 32 on claim 44, which was canceled. The attached claim appendix is written to include the amendments to claims.

**(5) Summary of the Invention:**

Coated substrates, for various uses are well known. Furthermore, the use of two layers of coating, in which the upper layer and lower layer provide different functions, is well known.

The present invention defines a sheet of plastic suitable for printing a toner image thereon, that is coated with two layers, an underlayer chosen from the group consisting of amine terminated polyamide, a silane coupling agent and amino propyl silane, and an overlayer. Various parameters of the coating layers are defined.

**(6) Issues:**

A- Whether claim 11 is indefinite under 35 U.S.C. §112, second paragraph.

B- Whether claims 1-3, 11, 14-18, 20, 23-29, 32 and 42 are unpatentable over Touhsaent et al. (US 5,419,960) in view of Ueno et al. (US 6,040,268)

### **(7) Grouping of the Claims**

The claims are grouped as follows, according to the set of argument relevant for each group of claims.

<b>GROUP</b>	<b>CLAIMS</b>	<b>ARGUMENTS</b>
1.	Claims 1, 14-18, 23, 25, 26, 28 and 32	A
2.	Claim 2	A or B
3.	Claim 3	A or C
4.	Claim 24	A or D
5.	Claim 27	A or E
6.	Claim 11	A and F

The claims have been divided into six groups, the claims of each of which stand and falls together. However, since for each of groups 2-5 there are two sets of arguments for patentability, if argument A is accepted by the board, all groups will be allowed. If argument B is accepted (and argument A is not), the claim in Group 2 are allowable, etc. Thus, the claims as a whole do not stand or fall together, nor does the failure of a particular argument mean that all claims covered by the argument fail.

For claim 11 which is also rejected under 35 USC §112, both arguments A and F have to be accepted (unless the rejection under 35 USC §112 is withdrawn). If the amendment is accepted and the rejection under 35 USC §112 is withdrawn, claim 11 is part of group 1.

**(8) Arguments:**

Summary of the cited prior art.

Touhsaent describes a sheet of plastic coated with a double layer coating on one side. The objective of Touhsaent is to provide a material that will heat seal well. (Abstract, Col. 1, lines 7-28) It is axiomatic that the coating layers must continue to adhere to the plastic in order for the invention to work. Otherwise any seal will come apart. The coated surface is not meant for printing. Rather the other surface (the surface not referenced by the Examiner) of the sheet is coated or otherwise treated so that it can be printed. (col. 4, lines 41-52, especially 51-52). In order to improve the adhesion of the (seal) coating to the substrate, a primer is used. (Col. 6, lines 14-25). None of the primers described correspond to those claimed in claim 1.

Touhsaent teaches that additives are added to the outer, sealing layer. These include the preferable addition of microcrystalline wax as a blocking agent (col. 1, lines 49-50) at 5-7% by weight (Table 1, MWX) and the preferable addition of (particulate) fused silica in an amount of 0.1 to 2.0 % (col. 2, line 62-col. 3, line 2). Other particulate matter, such as talc (col. 3, lines 2-5) can also be added.

Touhsaent, which the Examiner indicates teaches the outer layer, teaches that the outer layer should have a thickness of between 0.02 and 0.10 mil, roughly between 5.1 and 25.4 micrometers.

Touhsaent describes his underlayer (of a different composition than that claimed in the present application) as having a weight of between 0.5 to 0.9 gram/1000 in<sup>2</sup>. This corresponds to about 0.8 to 1.5 micrometers.

One of the materials for the sheet is BOPP.

The sheet of Oeno is directed to an intermediate sheet in an imaging process. A sheet (ref. 2 in the figures) is provided in Oeno which may be made of a plastic material (col. 9, lines 28-45). BOPP is not a named material. A first layer, termed an adhesive layer (ref. 3 in the figures) is coated onto sheet 2. A second layer, termed an "interposing layer 4" is coated onto layer 3. It should be noted however, that the "adhesive" is not meant to stick to sheet 2. Rather it is meant to be released from the sheet. (See, for example, the penultimate paragraph of the abstract; col. 2, lines 27-35; the paragraph bridging cols. 2 and 3, col. 3, lines 25-27; col. 5, lines 31-35; col. 6, lines 58-65; etc., etc.) While the adhesive is meant to be released from the sheet it is meant to adhere to a further object, when it is removed from the sheet (col. 7, lines 16-18). As indicated at col. 6, lines 63-65, it is meant to be removable from the further object as well. In fact, if the adhesive is not easily released, a release layer is provided. (Col. 9, line 46 to col. 10, line 9.

During the process described in Oeno (See Figs. 3B-4C, the (outer) interposing layer is brought into contact with and adhered to an intermediate transfer member 31 (Fig. 3C) on which an image "A" is formed. The image is not "printed" on the substrate 1, rather it is laminated by the substrate. The substrate 2 is then removed and a laminated image "sandwich" results (Fig. 4A). This sandwich is then attached to a further substrate to form the final product.

#### Summary of the basis for the arguments

As a preliminary matter, applicants point out that arguments A are based on a lack of a *prima facie* case of obviousness of the *combination* suggested by the Examiner and the lack of features of claims 1 and 42 in the combination, if it were obvious to make it. Arguments B-E are based on a lack of a *prima facie* case of obviousness in that the combination, even if made, does not provide all of the limitations of the claim in the respective group. In view of the lack of *prima*

*facie* case, applicants submit that there is no valid rejection to respond to and therefore they have not argued patentability of the claims for other reasons.

**Arguments A.1)** The two references that are "combined" by the examiner are directed to completely different functions. One (Touhsaent) is directed to a system for heat sealing in which an overlayer has the function of heat sealing a package. The underlayer is meant to *permanently* bond the overlayer to the substrate. In Ueno, the overlayer is also meant to bond to another surface. However, in the case of Ueno, the underlayer is meant to very temporarily hold the overlayer to the substrate. The Examiner contends that it would have been obvious to replace the adhesive of Touhsaent by that of Ueno. But this would, if the adhesive of Ueno worked in the same way as Ueno suggests, as a *poor adhesive*, completely defeat the reason for the underlayer of Touhsaent, which is to increase the adhesion of the overlayer to the substrate. Furthermore, one would, based on the teaching of Ueno, expect this poor result, so that there would not be a reasonable expectation of success, in the sense of Touhsaent.

2) Furthermore, one would not utilize the system of Touhsaent, with or without the "improvement" of Ueno for the purpose set forth in the claim. On the contrary, Touhsaent teaches against printing on the overlayer, as indicated in claims 1 and 42. It is indicated at col. 4, lines 41-52 that printing, if any, is on the other side of the substrate (not the side referenced by the Examiner.

**Arguments B.** In the combination proposed by the Examiner, the outerlayer is taught by Touhsaent. However, Touhsaent teaches clearly that the outerlayer preferably has fairly large amounts of particulate matter. See for example the paragraph bridging cols. 2 and 3, the first full paragraph of col. 3, col. 5, lines 55-58, Table I.

Thus, the alleged combination does not have the required limitation of claim 2, that the overlayer is free of particulate matter, and claim 2 is not *prima facie* obvious.

**Arguments C.** In the combination proposed by the Examiner, the overlayer is taught by Touhsaent. However, Touhsaent teaches clearly that the overlayer preferably has a fairly large amount of wax. See for example, col. 2, lines 47-61 and Table I (MWX is believed to be the "microcrystalline wax" of col. 2, lines 47-61).

Thus, the alleged combination does not have the required limitation of claim 3, that the overlayer is wax and pigment free, and claim 3 is not *prima facie* obvious.

**Arguments D.** In the combination proposed by the Examiner, the thickness of the layers is said to be taught by the Touhsaent reference. The thickness of the underlayer is indicated at col. 6, line 21 as 0.5-0.9 grams/1000 in<sup>2</sup>. This is equivalent to a minimum of about 0.7 grams/m<sup>2</sup>. This is more than the maximum weight specified in claim 24.

Thus, the alleged combination does not have the required limitation of claim 24, that the underlayer has a weight of between about 0.3 and 0.5 grams per square meter, and claim 24 is not *prima facie* obvious.

**Arguments E.** In the combination proposed by the Examiner, the thickness of the layers is said to be taught by the Touhsaent reference. The thickness of the overlayer is indicated at col. 5, lines 31-32 as 0.02 mils-0.1 mils. This is equivalent to about 0.5 to 2.5 grams/m<sup>2</sup>. This is more than the maximum weight specified in claim 27.

Thus, the alleged combination does not have the required limitation of claim 27, that the overlayer has a weight of between about 0.25 and about 0.35 grams per square meter, and claim 27 is not *prima facie* obvious.

**Arguments F.** Applicants note that BOPP is a term of the art for biaxially oriented polypropylene. As proof of this fact, applicants note that the Examiner correctly identified this material in the Touhsaent reference, even though the reference did not use the shortened term BOPP. Thus, applicants submit that this term would have clear to a person of skill in the art.

**(9) Conclusion**

None of the claims are anticipated and all of the claims are patentable in view of the prior art cited. In view of the above arguments, applicants respectfully request that the Board reverse the ruling of the examiner and allow all the claims.

Attached is an Appendix, claims under appeal.

Respectfully submitted,  
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## Appendix-Claims under appeal

1. A substrate suitable for printing a toner image thereon, comprising:  
a sheet of plastic;  
an underlayer coating, on the sheet of plastic, comprising a first polymer material comprising a polymer chosen from the group consisting of amine terminated polyamide, a silane coupling agent and amino propyl triethoxy silane;  
an overlayer coating, directly on the underlayer, comprising a second polymer material and having an outer surface to which a toner image can be fused and fixed.
2. A substrate according to claim 1 or claim 42 wherein the overlayer is free of particulate matter.
3. A substrate according to claim 1 or claim 42 wherein the overlayer is wax and pigment free.
11. A substrate according to claim 1 or claim 42 wherein the sheet of plastic is BOPP (biaxially oriented polypropylene film).
14. A substrate according to claim 1 or claim 42 wherein the overlayer comprises ethylene acrylic acid copolymer.
15. A substrate according to claim 14 wherein the ethylene acrylic acid copolymer has an acrylic acid comonomer percentage weight of less than 18%.
16. A substrate according to claim 14 wherein the ethylene acrylic acid copolymer has an acrylic acid comonomer percentage weight of less than 16%.
17. A substrate according to claim 14 wherein the ethylene acrylic acid copolymer has an acrylic acid comonomer percentage weight of more than 8%.

18. A substrate according to claim 14 wherein the ethylene acrylic acid copolymer has an acrylic acid comonomer percentage weight of more than 12%.
20. A substrate according to claim 1 or claim 42 wherein the underlayer comprises amine terminated polyamide.
23. A substrate according to claim 1 or claim 42 wherein the underlayer has a weight of between 0.1 and 1 grams per square meter.
24. A substrate according to claim 1 or claim 42 wherein the underlayer has a weight of between about 0.3 and 0.5 grams per square meter.
25. A substrate according to claim 1 wherein the overlayer has a weight of between 0.1 and 10 grams per square meter.
26. A substrate according to claim 1 or claim 42 wherein the overlayer has a weight of between 0.2 and 2 grams per square meter.
27. A substrate according to claim 26 wherein the overlayer has a weight of between about 0.25 and about 0.35 grams per square meter.
28. A substrate according to claim 1 or claim 42 wherein the underlayer is substantially free of particulate matter.
29. A substrate according to claim 1 or claim 42 consisting of only two coating layers.
32. A substrate produced according to the method of claim 30 or claim 45.
42. A substrate suitable for printing a toner image thereon, comprising:  
a sheet of plastic;

an underlayer coating, on the sheet of plastic, comprising a first polymer material comprising a polymer chosen from the group consisting of amine terminated polyamide, a silane coupling agent and amino propyl triethoxy silane; and

an overlayer coating, directly on the underlayer, comprising a second polymer material and having an outer surface to which a toner image can be fused and fixed,

wherein the overlayer coating has a thickness of between 0.1 and 10 microns.